

Filter Selection Guide for PAPR

Caution

The efficacy of respiratory protection filters is dependent on the ambient atmosphere.

Do not use in the following environments or situations:

- Oxygen deficient atmosphere, i.e. < 19.5%.
(STS definition. Individual countries may apply their own limits on oxygen deficiency)
- Oxygen only or oxygen-enriched atmosphere.
- Type, properties, concentration and composition of the hazardous agent is unknown.
- Concentrations of contaminants are immediately dangerous to life or health (IDLH).
- Confined spaces or any closed chambers such as containers, due to poor ventilation.
- Atmosphere with mixed chemical substances (except for multi-gas filter, e.g. ABEK1 filter)
- Filters that show signs of damage.
- Gases, vapours and particles which cannot be removed by filter.
- Environment where there is a possibility of explosion.

When using a particle filter, no hazardous gases may be present in the ambient air, when using a gas filter no hazardous particles.

In case of doubt a combined filter must be used.

If you are in doubt concerning any of the points mentioned above, or if you believe the composition of your atmosphere at work has changed, use respiratory device that operates independently of the ambient air (e.g. SCBA, Supplied Air Respirators).

The following extract of industrial gases and toxic substances will guide you in making the correct choice of respiratory device and filter. In any case, final choice and use of filtering devices remain the responsibility of the user.

Always read the instructions provided with every device before use.

How to read this Guide

In case there are two kinds of recommended filters,

◎ indicates “Strongly Recommended” and ○ indicates “Recommended”. In case there is only one kind of recommended filter, only ○ is used.

Particle filters which are intended to be used individually is marked with VP3.

For those used in combination with gas filter, they are marked with VA1P3, VABE1P3, or VA1B2E2K1P3.

◎ : Highly Recommended ○ : Recommended

Substance	CAS No.	Recommended Filter				Airline or SCBA
		Gas Filter			Particle	
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
A						
1 Acetaldehyde	75-07-0	◎	○	○		
2 Acetamide	60-35-5				○	
3 Acetic acid	64-19-7	◎	○	○		
4 Acetic anhydride	108-24-7	◎	○	○		
5 Acetone	67-64-1	◎	○	○		
6 Acetone cyanohydrin	75-86-5		◎	◎		
7 Acetonitrile	75-05-8	◎	○	○		
8 Acetylene	74-86-2					○
9 Acetyl chloride	75-36-5	◎	○	○		
10 o-Acetylsalicylic acid	50-78-2				○	
11 Acrolein	107-02-8	◎	○	○		
12 Acrylamide	79-06-1	◎	○	○	○	
13 Acrylic acid	79-10-7	◎	○	○		
14 Acrylonitrile	107-13-1	◎	○	○		
15 Aldrin	309-00-2				○	
16 Allyl alcohol	107-18-6	◎	○	○		
17 Allylamine	107-11-9	◎	○	○		
18 Allyl bromide	106-95-6	◎	○	○		
19 Allyl chloride	107-05-1	◎	○	○		
20 Allyl glycidyl ether	106-92-3	◎	○	○		
21 Allyl isocyanate	1476-23-9	◎	○	○		
22 Allyl propyl disulfide	2179-59-1		○	○		
23 Aluminium	7429-90-5				○	
24 Aluminium hydroxide	21645-51-2				○	
25 Aluminium oxide	1344-28-1				○	
26 Aluminium alkyl compounds	—	◎	○	○		
27 p-Aminoazobenzen	60-09-3				○	
28 o-Aminoazotoluene	97-56-3				○	
29 4-Aminodiphenyl	92-67-1				○	
30 3-Amino-9-ethylcarbazol	132-32-1				○	
31 2-Aminoethanol	141-43-5	◎	○	○		
32 2-Aminopyridine	504-29-0	◎	○	○	○	
33 Amitrole (3-Amino-1,2,4-triazole)	61-82-5				○	
34 Ammonia	7664-41-7			○		
35 Ammonium chloride fume	12125-02-9				○	
36 Ammonium sulfamate	7773-06-0				○	
37 n-Amyl acetate (1-Pentyl acetate)	628-63-7	◎	○	○		
38 sec-Amyl acetate (2-Pentyl acetate)	626-38-0	◎	○	○		
39 Aniline	62-53-3	◎	○	○		
40 Anisidine, o-isomer	90-04-0	◎	○	○		
41 Anisidine, p-isomer	104-94-9				○	
42 Anthracene	120-12-7				○	
43 Antimony and compounds, as Sb	7440-36-0				○	
44 Antimony penta chloride	7647-18-9		○	○		
45 Antimony trioxide, as Sb	1309-64-4				○	
46 ANTU (α-Naphthylthiourea)	86-88-4				○	

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		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
47	p-Aramide, fibrous dust	26125-61-1				○	
48	Argon	7440-37-1					○
49	Arsenic and inorganic compounds (except arsine), as As	7440-38-2				○	
50	Arsenic acid and its salts, as As	7778-39-4				○	
51	Arsenic pentoxide, as AS	1303-28-2				○	
52	Arsenic trioxide, as AS	1327-53-3				○	
53	Arsenous acid and its salts, as As	13464-58-9				○	
54	Arsine	7784-42-1					○
55	Asbestos, all forms	1332-21-4 12001-28-4 12172-73-5 7536-66-4 77536-67-5 77536-68-6 132207-32-0				○	
56	Asphalt fume (Bitumen)	8052-42-4	◎	○	○		
57	Atrazine	1912-24-9				○	
58	Auramine	492-80-8				○	
59	Azinphos-methyl (Guthion®)	86-50-0				○	
B							
60	Barium and soluble compounds, as Ba	7440-39-3				○	
61	Barium chloride	10326-27-9				○	
62	Benomyl	17804-35-2				○	
63	Beechwood dust	—				○	
64	Benzaldehyde	100-52-7	◎	○	○		
65	Benzene	71-43-2	◎	○	○		
66	Benidine	92-87-5				○	
67	Benzo[a]pyrene	50-32-8				○	
68	Benzo[e]pyrene	192-97-2				○	
69	Benzoyl peroxide (Dibenzoyl peroxide)	94-36-0				○	
70	Benzylamine	100-46-9	◎	○	○		
71	Benzyl butyl phthalate	85-68-7	◎	○	○		
72	Benzyl chloride	100-44-7		○	○		
73	Berillium and compounds, as Be	7440-41-7				○	○
74	4,4'-Bis(dimethylamino)benzophenone (Micher's ketone)	90-94-8				○	
75	Biphenyl (Diphenyl)	92-52-4				○	
76	Bismuth telluride, Undoped	1304-82-1				○	
77	Bismuth telluride, Se-doped, as Bi ₂ Te ₃	1304-82-1				○	
78	Borax (Sodium tetraborate)	1330-43-4				○	
79	Boric acid	10043-35-3				○	
80	Boron oxide	1303-86-2				○	

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			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
81	Boron tribromide	10294-33-4					○
82	Boron trifluoride	7637-07-2					○
83	Bromacil	314-40-9				○	
84	2-Bromobutane	78-76-2	◎	○	○		
85	Bromine	7726-95-6		○	○		
86	Bromine pentafluoride	7789-30-2					○
87	Bromobenzene	108-86-1	◎	○	○		
88	1-Bromo-2-chloroethane	107-04-0	◎	○	○		
89	Bromoethane (Ethyl bromide)	74-96-4	◎	○	○		
90	Bromoethylene (Vinyl bromide)	593-60-2					○
91	Bromoform (Tribromomethane)	75-25-2	◎	○	○		
92	Bromomethane (Methyl bromide)	74-83-9					
93	2-Bromopentane	107-81-3	◎	○	○		
94	1,3-Butadiene	106-99-0					○
95	n-Butanal (Butyraldehyde)	123-72-8	◎	○	○		
96	n-Butane	106-97-8					○
97	1,4-Butane sultone	1633-83-6	◎	○	○		
98	2,4-Butane sultone	1121-03-5	◎	○	○		
99	1-Butanol (n-Butyl alcohol)	71-36-3	◎	○	○		
100	2-Butanol (sec-Butyl alcohol)	78-92-2	◎	○	○		
101	2-Butanone (Methyl ethyl ketone)	78-93-3	◎	○	○		
102	2-Butanone peroxide (Methyl ethyl ketone peroxide)	1338-23-4	◎	○	○	○	
103	2-Butenal (Crotonaldehyde)	4170-30-3	◎	○	○		
104	2-Butoxyethanol (EGBE)	111-76-2	◎	○	○		
105	2-Butoxyethyl acetate (EGBEA)	112-07-2	◎	○	○		
106	n-Butyl acetate (1-Butyl acetate)	123-86-4	◎	○	○		
107	sec-Butyl acetate (2-Butyl acetate)	105-46-4	◎	○	○		
108	tert-Butyl acetate	540-88-5	◎	○	○		
109	n-Butyl acrylate	141-32-2	◎	○	○		
110	n-Butylamine	109-73-9	◎	○	○		
111	sec-Butylamine	13952-84-6	◎	○	○		
112	tert-Butyl chromate, as CrO ₃	1189-85-1				○	
113	Butyl formate	592-84-7	◎	○	○		
114	n-Butyl glycidyl ether (BGE)	2426-08-6	◎	○	○		
115	tert-Butyl glycidyl ether	7665-72-7	◎	○	○		
116	tert-Butyl hydroperoxide	75-91-2		○	○		
117	n-Butyl lactate	138-22-7	◎	○	○		

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		Gas Filter			Particle	
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
118 n-Butyl mercaptan (Butanethiol)	109-79-5		○	○		
119 n-Butyl methacrylate	97-88-1	◎	○	○		
120 tert-Butyl peroxyacetate	107-71-1		○	○		
121 o-sec-Butyl phenol	89-72-5	◎	○	○		
122 p-tert-Butyl phenol	98-54-4				○	
123 Butyl stearate	123-95-5	◎	○	○	○	
124 p-tert-Butyltoluene	98-51-1	◎	○	○		
C						
125 Cadmium and compounds, as Cd	7440-43-9				○	
126 Cadmium chloride, as Cd	10108-64-2				○	
127 Cadmium oxide, as Cd	1306-19-0				○	
128 Cadmium sulfate, as Cd	1306-23-6				○	
129 Calcium arsenate, as As	7778-44-1				○	
130 Calcium bisulfide solution	13780-03-5		○	○		
131 Calcium carbonate	1317-65-3				○	
132 Calcium chromate, as Cr	13765-19-0				○	
133 Calcium cyanamide	156-62-7				○	
134 Calcium hydroxide	1305-62-0				○	
135 Calcium oxide	1305-78-8				○	
136 Camphor, synthetic	76-22-2	◎	○	○	○	
137 Caprolactam	105-60-2				○	
138 Captafol	2425-06-1				○	
139 Captan	133-06-2				○	
140 Carbaryl (Sevin®)	63-25-2				○	
141 Carbofuran	1563-66-2				○	
142 Carbon black	1333-86-4				○	
143 Carbon dioxide	124-38-9					○
144 Carbon disulfide	75-15-0		○	○		
145 Carbon monoxide	630-08-0					○
146 Carbon tetrabromide	558-13-4	◎	○	○	○	
147 Carbon tetrachloride	56-23-5	◎	○	○		
148 Carbonyl fluoride	353-50-4					○
149 Cellulose	9004-34-6				○	
150 Chlordane	57-74-9				○	
151 Chlordecone (Kepone®)	143-50-0	◎	○	○	○	
152 Chlorine	7782-50-5		○	○		
153 Chlorine dioxide	10049-04-4		○	○		
154 Chlorine trifluoride	7790-91-2					○
155 Chloroacetaldehyde	107-20-0	◎	○	○		
156 2-Chloroacetophenone (Phenacyl chloride) (CN)	532-27-4	◎	○	○	○	
157 Chloroacetyl chloride	79-04-9	◎	○	○		
158 p-Chloroaniline	106-47-8				○	
159 Chlorobenzene (Monochlorobenzene)	108-90-7	◎	○	○		
160 o-Chlorobenzylidene malononitrile (CS)	2698-41-1				○	
161 Chlorobromomethane (Bromochloromethane)	74-97-5	◎	○	○		

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			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
162	Chlorodiphenyl, 42% chlorine	53469-21-9	◎	○	○		
163	Chlorodiphenyl, 54% chlorine	11097-69-1	◎	○	○		
164	Chloroform (Trichloromethane)	67-66-3	◎	○	○		
165	N-Chloroformyl-morpholine	15159-40-7	◎	○	○		
166	bis(Chloromethyl)ether	542-88-1		○	○		
167	Chloromethyl methyl ether (CMME ; Methyl chloromethyl ether)	107-30-2	◎	○	○		
168	3-Chloro-2-methyl-1-propene	563-47-3	◎	○	○		
169	1-Chloronaphthaline	90-13-1	◎	○	○	○	
170	1-Chloro-1-nitropropane	600-25-9		○	○		
171	1-Chloropentane	543-59-9	◎	○	○		
172	Chloropicrin (Trichloronitromethane)	76-06-2	◎	○	○		
173	β-Chloroprene (2-Chloro-1.3-butadiene)	126-99-8	◎	○	○		
174	1-Chloropropane	540-54-5	◎	○	○		
175	2-Chloropropane (Isopropyl chloride)	75-29-6	◎	○	○		
176	o-Chlorostyrene	2039-87-4	◎	○	○		
177	o-Chlorotoluene	95-49-8	◎	○	○		
178	4-Chloro-o-toluidine	95-69-2	◎	○	○		
179	5-Chloro-o-toluidine	95-79-4	◎	○	○		
180	Chlorpyrifos	2921-88-2	◎	○	○		
181	Chromic acid and chromates, as Cr	7738-94-5				○	
182	Chromite, as Cr	—				○	
183	Chromium (III) inorganic compounds, as Cr	7440-47-3				○	
184	Chromium (VI) inorganic compounds, water-soluble, as Cr	—				○	
185	Chromium (VI) inorganic compounds, insoluble, as Cr	—				○	
186	Chromium carbonyl	13007-92-6					○
187	Chromium (III) oxide	1308-38-9				○	
188	Chromium oxychloride	14977-61-8		○	○		
189	Citric acid	77-92-9				○	
190	Coal dust, anthracite	—				○	
191	Coal dust, bituminous or lignite	—				○	
192	Coal tar pitch volatiles, as benzene soluble aerosol	65996-93-2	◎	○	○	○	
193	Cobalt and compounds	7440-48-4				○	
194	Cobalt (II) acetate tetrahydrate	6147-53-1	◎	○	○	○	
195	Coconut oil	—				○	
196	Copper, dusts and mists, as Cu	7440-50-8				○	
197	Copper, fume, as Cu	7440-50-8				○	
198	Copper (II) chloride	7447-39-4				○	
199	Copper (II) sulfate	7758-98-7				○	
200	Cotton dust, raw, untreated	—				○	
201	Cresol, all isomers	1319-77-3	◎	○	○		
202	Cumene	98-82-8	◎	○	○		

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			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
203	Cumene hydroperoxide	80-15-9	◎	○	○		
204	Cyanamide	420-04-2		○	○		
205	Cyanides, as CN	—		○	○		
206	Cyanogen	460-19-5					○
207	Cyanogen bromide	506-68-3		○	○		
208	Cyanogen chloride	506-77-4					○
209	Cyanuric chloride	108-77-0		○	○		
210	Cyclohexane	110-82-7	◎	○	○		
211	Cyclohexanol	108-93-0	◎	○	○		
212	Cyclohexanone	108-94-1	◎	○	○		
213	Cyclohexene	110-83-8	◎	○	○		
214	Cyclohexylamine	108-91-8	◎	○	○		
215	Cyclonite (RDX)	121-82-4				○	
216	1,3-Cyclopentadiene	542-92-7	◎	○	○		
217	Cyclopentanone	120-92-3	◎	○	○		
D							
218	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7				○	
219	DDT (Dichlorodiphenyltrichloro-ethane)	50-29-3				○	
220	Decaborane	17702-41-9					○
221	n-Decane	124-18-5	◎	○	○		
222	1-Decanol	112-30-1	◎	○	○		
223	Demeton (Systox®)	8065-48-3	◎	○	○		
224	Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone)	123-42-2	◎	○	○		
225	Diacetyl peroxide	110-22-5		○	○		
226	2,4-Diaminoanisole	615-05-4				○	
227	3,3'-Diaminobenzidine	91-95-2				○	
228	3,3'-Diaminobenzidine tetrahydrochloride	7411-49-5				○	
229	4,4'-Diamino-3,3'- dimethyldiphenylmethane	838-88-0				○	
230	2,4-Diaminotoluene (Toluene-2,4-diamine)	95-80-7	◎	○	○	○	
231	Diatomaceous earth, calcinated	99439-28-8				○	
232	Diatomaceous earth, uncalcinated	61790-53-2				○	
233	Diazinon®	333-41-5	◎	○	○		
234	Diazomethane	334-88-3					○
235	Dibenzylamine	103-49-1	◎	○	○		
236	Dibenzylether	103-50-4	◎	○	○		
237	Diborane	19287-45-7					○
238	1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	◎	○	○		
239	1,2-Dibromoethane	106-93-4	◎	○	○		
240	2-N-Dibutylaminoethanol	102-81-8	◎	○	○		
241	Dibutyl ether	142-96-1	◎	○	○		
242	Dibutyl phosphate	107-66-4	◎	○	○		
243	Dibutyl phthalate	84-74-2	◎	○	○		
244	Dichloroacetylene	7572-29-4	◎	○	○		
245	o-Dichlorobenzene	95-50-1	◎	○	○		

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			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
246	m-Dichlorobenzene	541-73-1	◎	○	○		
247	p-Dichlorobenzene	106-46-7	◎	○	○		
248	3,3'-Dichlorobenzidine	91-94-1				○	
249	1,4-Dichloro-2-butene	764-41-0	◎	○	○		
250	2,2'-Dichlorodiethyl ether	111-44-4	◎	○	○		
251	Dichlorodiisopropyl ether	108-60-1	◎	○	○		
252	Dichlorodimethyl ether	4885-02-3	◎	○	○		
253	1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5				○	
254	1,1-Dichloroethane	75-34-3	◎	○	○		
255	1,2-Dichloroethane	107-06-2	◎	○	○		
256	1,1-Dichloroethylen	75-35-4	◎	○	○		
257	cis-1,2-Dichloroethene	156-59-2	◎	○	○		
258	trans-1,2-Dichloroethene	156-60-5	◎	○	○		
259	Dichloromethane	75-09-2	◎	○	○		
260	1,2-Dichloromethoxyethane	41683-62-9	◎	○	○		
261	1,1-Dichloro-1-nitroethane	594-72-9	◎	○	○		
262	1,2-Dichloropropane	78-87-5	◎	○	○		
263	1,3-Dichloro-2-propanol	96-23-1	◎	○	○		
264	1,3-Dichloropropene	542-75-6	◎	○	○		
265	2,2-Dichloropropionic acid	75-99-0	◎	○	○		
266	Dichlorotetrafluoroethane (1,2-Dichloro-1,1,2,2-tetrafluoroethane)	76-14-2					○
267	2,4-Dichlorotoluene	95-73-8	◎	○	○		
268	Dichlorvos (DDVP)	62-73-7	◎	○	○		
269	Dicyclohexylmethane-4,4'-diisocyanate	5124-30-1	◎	○	○		
270	Dicyclohexyl peroxide	1758-61-8	◎	○	○		
271	Dicyclohexyl phthalate	84-61-7				○	
272	Dicyclopentadiene	77-73-6	◎	○	○		
273	Dicyclopentadienyl iron, as Fe (Ferrocene)	102-54-5				○	
274	Dieldrin	60-57-1				○	
275	Diesel fuel	68476-30-2 68334-30-5 68476-34-6 77650-28-3	◎	○	○		
276	Diethanolamine	111-42-2	◎	○	○	○	
277	Diethylamine	109-89-7	◎	○	○		
278	2-Diethylaminoethanol	100-37-8	◎	○	○		
279	Diethyl carbonate	105-58-8	◎	○	○		
280	Diethylene glycol	111-46-6	◎	○	○		
281	Diethylene triamine	111-40-0	◎	○	○		
282	Diethyl ether (Ethyl ether)	60-29-7					
283	N,N-Diethylhydroxylamine (DEHA)	3710-84-7	◎	○	○		
284	Diethyl oxalate	95-92-1	◎	○	○		
285	Diethyl phtalate	84-66-2	◎	○	○		
286	Diethyl sebacate	110-40-7	◎	○	○		
287	Diethyl sulfate	64-67-5	◎	○	○		
288	Diethyl sulfide	352-93-2		○	○		

◎ : Highly Recommended ○ : Recommended

	Substance	CAS No.	Recommended Filter				Airline or SCBA
			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
289	Difluorobromomethane	1511-62-2					○
290	Difluorodibromomethane	75-61-6		○	○		
291	Diglycidyl ether (DGE)	2238-07-5	◎	○	○		
292	1,2-Dihydroxybenzene (Catechol)	120-80-9				○	
293	1,3-Dihydroxybenzene (Resorcinol)	108-46-3				○	
294	1,4-Dihydroxybenzene (Hydroquinone)	123-31-9				○	
295	Diisobutyl ketone	108-83-8	◎	○	○		
296	Diisopropylamine	108-18-9	◎	○	○		
297	Dilauroyl peroxide	105-74-8	◎	○	○	○	
298	3,3'-Dimethoxybenzidine	119-90-4				○	
299	1,1-Dimethoxyethane	534-15-6	◎	○	○		
300	1,2-Dimethoxyethane	110-71-4	◎	○	○		
301	Dimethoxymethane	109-87-5	◎	○	○		
302	N,N-Dimethylacetamide	127-19-5	◎	○	○		
303	Dimethylamine	124-40-3			○		
304	1-Dimethylamino-2-propanol	108-16-7	◎	○	○		
305	N,N-Dimethylaniline	121-69-7	◎	○	○		
306	3,3'-Dimethylbenzidine (o-Tolidine)	119-93-7				○	
307	2,2-Dimethylbutane	75-83-2	◎	○	○		
308	2,3-Dimethylbutane	79-29-8	◎	○	○		
309	1,3-Dimethylbutyl acetate	108-84-9	◎	○	○		
310	Dimethylcarbamoyl chloride	79-44-7		○	○		
311	N,N-Dimethylcyclohexylamine	98-94-2	◎	○	○		
312	Dimethyl disulfide	624-92-0		○	○		
313	N,N-Dimethylethanolamine	108-01-0	◎	○	○		
314	Dimethyl ether	115-10-6					
315	N,N-Dimethylethylamine	598-56-1	◎	○	○		
316	N,N-Dimethylformamide	68-12-2	◎	○	○		
317	1,1-Dimethylhydrazine	57-14-7			○		
318	1,2-Dimethylhydrazine	540-73-8			○		
319	Dimethyl hydrogen phosphite	868-85-9	◎	○	○		
320	N,N-Dimethylisopropylamine	996-35-0	◎	○	○		
321	Dimethyl phthalate	131-11-3	◎	○	○		
322	2,2-Dimethyl propane (Neopentane)	463-82-1					
323	Dimethyl sulfate	77-78-1	◎	○	○		
324	Dimethyl sulfide	75-18-3	◎	○	○		
325	1,2-Dinitrobenzene	528-29-0				○	
326	1,3-Dinitrobenzene	99-65-0				○	
327	1,4-Dinitrobenzene	100-25-4				○	
328	4,6-Dinitro-o-cresol	534-52-1				○	
329	1,5-Dinitronaphthalene	605-71-0				○	
330	2,6-Dinitronaphthalene	24824-26-8	◎	○	○		
331	Dinitropyrene	78432-19-6				○	
332	2,3-Dinitrotoluene	602-01-7				○	
333	2,4-Dinitrotoluene	121-14-2				○	
334	2,5-Dinitrotoluene	619-15-8				○	

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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
335	2,6-Dinitrotoluene	606-20-2				○	
336	3,4-Dinitrotoluene	610-39-9				○	
337	3,5-Dinitrotoluene	618-85-9				○	
338	1,4-Dioxane	123-91-1	◎	○	○		
339	Dioxathion	78-34-2		○	○		
340	1,3-Dioxolane	646-06-0	◎	○	○		
341	Dipentene	138-86-3	◎	○	○		
342	Diphenylamine	122-39-4				○	
343	Diphenyl ether	101-84-8	◎	○	○		
344	Diphenylmethane diisocyanate (MDI)	101-68-8	◎	○	○		
345	Dipropylamine	142-84-7	◎	○	○		
346	Dipropylene glycol methyl ether	34590-94-8	◎	○	○		
347	Dipropyl ether	111-43-3	◎	○	○		
348	Diquat dibromide	85-00-7				○	
349	Disulfoton	298-04-4		○	○		
350	Disulfur dichloride (Sulfur monochloride)	10025-67-9		○	○		
351	Di-sec-octyl phthalate	117-81-7	◎	○	○		
352	Disulfiram	97-77-8				○	
353	2,6-Di-tert-butyl-p-cresol	128-37-0				○	
354	Di-tert-butyl peroxide	110-05-4	◎	○	○		
355	Diuron	330-54-1				○	
356	1,2-Divinylbenzene	91-14-5	◎	○	○		
357	1,3-Divinylbenzene	108-57-6	◎	○	○		
358	Dodecylbenzene	123-01-3	◎	○	○		
E							
359	Emery	1302-74-5				○	
360	Endosulfan	115-29-7				○	
361	Endrin	72-20-8				○	
362	Enflurane	13838-16-9					
363	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8	◎	○	○		
364	EPN (O-Ethyl O-4-nitrophenyl phenyl phosphonothioate)	2104-64-5	◎	○	○		
365	1,2-Epoxybutane	106-88-7	◎	○	○		
366	Ethanol	64-17-5	◎	○	○		
367	2-Ethoxyethanol (EGEE; Cellosolve)	110-80-5	◎	○	○		
368	2-Ethoxyethyl acetate (EGEEA; Cellosolve acetate)	111-15-9	◎	○	○		
369	Ethyl acetate	141-78-6	◎	○	○		
370	Ethyl acrylate (Acrylic acid)	140-88-5	◎	○	○		
371	Ethylamine	75-04-7					
372	Ethyl amyl ketone (5-Methyl-3-heptanone)	541-85-5	◎	○	○		
373	Ethyl benzene	100-41-4	◎	○	○		
374	Ethyl carbamate (Urethane)	51-79-6	◎	○	○		
375	Ethyl chloride (Chloroethane)	75-00-3					

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Substance	CAS No.	Recommended Filter				Airline or SCBA
		Gas Filter			Particle	
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
376 Ethyl chloroacetate	105-39-5	◎	○	○		
377 Ethylene chlorohydrin (2-Chloroethanol)	107-07-3	◎	○	○		
378 Ethylenediamine (1,2-Diaminoethane)	107-15-3	◎	○	○		
379 Ethyleneimine (Aziridine)	151-56-4			○		
380 Ethylene glycol	107-21-1	◎	○	○		
381 Ethylene glycol dinitrate (EGDN)	628-96-6	◎	○	○		
382 Ethylene glycol monoisopropyl ether	109-59-1	◎	○	○		
383 Ethylene oxide	75-21-8					
384 Ethyl formate (Formic acid ethyl ester)	109-94-4	◎	○	○		
385 2-Ethyl-1-hexanol	104-76-7	◎	○	○		
386 Ethyl mercaptane (Ethanethiol)	75-08-1	◎	○	○		
387 4-Ethylmorpholine	100-74-3	◎	○	○		
388 Ethyl propionate	105-37-3	◎	○	○		
389 Ethyl silicate (Silicic acid tetraethyl ester)	78-10-4	◎	○	○		
F						
390 Fenchlorophos	299-84-3	◎	○	○		
391 Fention	55-38-9	◎	○	○		
392 Ferbam	14484-64-1				○	
393 Ferrocene	102-54-5				○	
394 Ferrovandium dust	12604-58-9				○	
395 Flour dust	—				○	
396 Fluorides, as F	—		○	○		
397 Fluorine	7782-41-4		○	○		
398 Fluorobenzene	462-06-6	◎	○	○		
399 Formaldehyde	50-00-0		○	○		
400 Formamide	75-12-7	◎	○	○		
401 Formic acid	64-18-6		○	○		
402 Fuel oils	—	◎	○	○		
403 Furan	110-00-9	◎	○	○		
404 Furfural	98-01-1	◎	○	○		
405 Furfuryl alcohol	98-00-0	◎	○	○		
G						
406 Gasoline	86290-81-5 8006-61-9	◎	○	○		
407 Gelatin	9000-70-8				○	
408 Germanium tetrahydride	7782-65-2					○
409 Glass, fibrous or dust	—				○	
410 Glutaraldehyde	111-30-8	◎	○	○		
411 Glycerine	56-81-5	◎	○	○		
412 Glycidol (2,3-Epoxy-1-propanol)	556-52-5	◎	○	○		
413 Glycidyl isopropyl ether	4016-14-2	◎	○	○		
414 Glyoxal	107-22-2				○	
415 Graphite, natural	7782-42-5				○	
H						

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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
416	Hafnium and compounds, as Hf	7440-58-6				○	
417	Helium	7440-59-7					○
418	Halotane (2-Bromo-2-chloro-1,1,1-trifluoroethane)	151-67-7					
419	Heptachlor	76-44-8				○	
420	n-Heptane	142-82-5	◎	○	○		
421	2-Heptanone	110-43-0	◎	○	○		
422	3-Heptanone	106-35-4	◎	○	○		
423	4-Heptanone	123-19-3	◎	○	○		
424	Hexachlorobenzene (HCB)	118-74-1				○	
425	Hexachlorocyclopentadiene	77-47-4	◎	○	○		
426	Hexachloroethane	67-72-1	◎	○	○		
427	Hexamethylenediamine	124-09-4	◎	○	○		
428	Hexamethylene diisocyanate	822-06-0	◎	○	○		
429	Hexamethylenetetramine	100-97-0		○	○		
430	Hexamethylphosphoramide	680-31-9	◎	○	○		
431	n-Hexane	110-54-3	◎	○	○		
432	n-Hexanol	111-27-3	◎	○	○		
433	2-Hexanone	591-78-6	◎	○	○		
434	1-Hexene	592-41-6	◎	○	○		
435	cis-2-Hexene	7688-21-3	◎	○	○		
436	trans-2-Hexene	4050-45-7	◎	○	○		
437	Hexylamine	111-26-2	◎	○	○		
438	Hexylene glycol	107-41-5	◎	○	○		
439	Hydrazine	302-01-2			○		
440	Hydrazobenzene (1,2-Diphenylhydrazine)	122-66-7				○	
441	Hydrazoic acid	7782-79-8		○	○		
442	Hydrogenated terphenyls	61788-32-7	◎	○	○		
443	Hydrogen bromide	10035-10-6		○	○		
444	Hydrogen chloride	7647-01-0		○	○		
445	Hydrogen cyanide	74-90-8		○	○		
446	Hydrogen fluoride, as F	7664-39-3		○	○		
447	Hydrogen peroxide	7722-84-1		○	○		
448	Hydrogen selenide	7783-07-5		○	○		
449	Hydrogen sulfide	7783-06-4		○	○		
450	Hydroxylamine	7803-49-8		○	○		
451	2-Hydroxypropyl acrylate	999-61-1	◎	○	○		
452	Indene	95-13-6	◎	○	○		
453	Indium and compounds, as In	7440-74-6				○	
454	Inorganic fiber	—				○	
455	Iodine	7553-56-2	◎	○	○		
456	Iodoform	75-47-8	◎	○	○		
457	Iodomethane (Methyl iodide)	74-88-4	◎	○	○		
458	Iron(II) chloride	7758-94-3				○	
459	Iron(III) chloride	7705-08-0				○	
460	Iron(II) oxide	1345-25-1				○	
461	Iron(III) oxide	1309-37-1				○	

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Substance	CAS No.	Recommended Filter				Airline or SCBA
		Gas Filter			Particle	
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
462	Iron pentacarbonyl	13463-40-6	◎	○	○	
463	Iron(II) sulfide	1317-37-9			○	
464	Iron(III) sulfide	12063-27-3			○	
465	Iron salts, soluble, as Fe	—			○	
466	Isoamyl acetate	123-92-2	◎	○	○	
467	Isoamyl alcohol	123-51-3	◎	○	○	
468	Isobutane	75-28-5				
469	Isobutanol (Isobutyl alcohol)	78-83-1	◎	○	○	
470	Isobutyl acetate	110-19-0	◎	○	○	
471	Isobutylamine	78-81-9	◎	○	○	
472	Isobutylformate	542-55-2	◎	○	○	
473	Isobutyraldehyde	78-84-2	◎	○	○	
474	Isoflurane	26675-46-7	◎	○	○	
475	Isooctane (2,2,4-Trimethylpentane)	540-84-1	◎	○	○	
476	Isophorone	78-59-1	◎	○	○	
477	Isophorone diisocyanate	4098-71-9	◎	○	○	
478	Isopropyl acetate	108-21-4	◎	○	○	
479	Isopropylamine	75-31-0	◎	○	○	
480	N-Isopropylaniline	768-52-5	◎	○	○	
481	Isopropyl ether	108-20-3	◎	○	○	
482	Isopropyl nitrate	1712-64-7	◎	○	○	
483	Isopropyl oil	—	◎	○	○	
J						
484	Jet fuel	—	◎	○	○	
K						
485	Kerosene	—	◎	○	○	
L						
486	Lactic acid	50-21-5		○	○	
487	Lead and inorganic compounds, as Pb	7439-92-1			○	
488	Lead alkyls	75-74-1 78-00-2	◎	○	○	
489	Lead(II) acetate trihydrate	6080-56-4			○	
490	Lead arsenate	3687-31-8			○	
491	Lead chromate	7758-97-6			○	
492	Linseed oil	—	◎	○	○	
493	Lindane (γ-Hexachlorocyclohexane)	58-89-9				
494	Lithium hydride	7580-67-8			○	
495	Lithium hydroxide	1310-65-2			○	
M						
496	Magnesium chloride	7786-30-3			○	
497	Magnesium hydroxide	1309-42-8			○	
498	Magnesium oxide	1309-48-4			○	
499	Magnesium sulfate	7487-88-9			○	
500	Malathion	121-75-5	◎	○	○	
501	Maleic acid	110-16-7			○	
502	Maleic anhydride	108-31-6	◎	○	○	
503	Manganese and inorganic compounds, as Mn	7439-96-5			○	



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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
504	Manganese, fume, as Mn	7439-96-5				○	
505	Manganese cyclopentadienyl tricarbonyl, as Mn	12079-65-1				○	
506	Manganese(IV) oxide	1313-13-9				○	
507	2-Mercaptoethanol	60-24-2		○	○		
508	Mercury and compounds, as Hg	7439-97-6					○
509	Mesityl oxide	141-79-7	◎	○	○		
510	Methacrylic acid	79-41-4	◎	○	○		
511	Methacrylonitrile	126-98-7	◎	○	○		
512	Methane	74-82-8					○
513	Methanol (Methyl alcohol)	67-56-1					
514	Methomyl	16752-77-5				○	
515	Methoxychlor	72-43-5				○	
516	2-Methoxyethanol (EGME)	109-86-4	◎	○	○		
517	2-Methoxyethyl acetate (EGMEA)	110-49-6	◎	○	○		
518	1-Methoxy-2-propanol	107-98-2	◎	○	○		
519	2-Methoxy-1-propanol	1589-47-5	◎	○	○		
520	1-Methoxy-2-propanol acetate	108-65-6	◎	○	○		
521	2-Methoxy-1-propanol acetate	70657-70-4	◎	○	○		
522	Methyl acetate	79-20-9	◎	○	○		
523	Methyl acrylate	96-33-3	◎	○	○		
524	Methylamine	74-89-5			○		
525	N-Methylaniline	100-61-8	◎	○	○		
526	2-Methylbutane	78-78-4	◎	○	○		
527	Methyl-tert-butyl ether	1634-04-4	◎	○	○		
528	Methyl chloroform (1,1,1-Trichloroethane)	71-55-6	◎	○	○		
529	Methyl-2-cyanoacrylate	137-05-3		○	○		
530	Methylcyclohexane	108-87-2	◎	○	○		
531	Methylcyclohexanol	25639-42-3	◎	○	○		
532	2-Methylcyclohexanone	583-60-8	◎	○	○		
533	Methyl demeton (Demeton-methyl)	8022-00-2	◎	○	○		
534	4,4'-Methylene-bis(2-chloroaniline) (MBOCA)	101-14-4				○	
535	4,4'-Methylene dianiline (4,4'-Diaminodiphenyl-methane)	101-77-9				○	
536	Methyl ethyl ketone peroxide	1338-23-4	◎	○	○		
537	Methyl formate	107-31-3	◎	○	○		
538	Methyl hydrazine	60-34-4		○	○		
539	Methyl isoamyl ketone (5-Methyl-2-hexanone)	110-12-3	◎	○	○		
540	Methyl isobutyl carbinol (4-Methyl-2-pentanol)	108-11-2	◎	○	○		
541	Methyl isobutyl ketone (4-Methyl-2-pentanone)	108-10-1	◎	○	○		
542	Methyl isocyanate	624-83-9	◎	○	○		
543	Methyl mercaptan (Methanethiol)	74-93-1					

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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
544	Methyl mercury	22967-92-6					○
545	Methyl methacrylate	80-62-6	◎	○	○		
546	Methyl parthion	298-00-0	◎	○	○		
547	2-Methylpentane	107-83-5	◎	○	○		
548	3-Methylpentane	96-14-0	◎	○	○		
549	4-Methylpent-3-en-2-on	141-79-7	◎	○	○		
550	2-Methyl-2-propanol (tert-Butyl alcohol)	75-65-0	◎	○	○		
551	Methyl propyl ketone (2-Pentanone)	107-87-9	◎	○	○		
552	2-Methyl-2-propanethiol	75-66-1	◎	○	○		
553	Methyl propionate	554-12-1	◎	○	○		
554	N-Methyl-2-pyrrolidone	872-50-4	◎	○	○		
555	Methyl silicate	681-84-5	◎	○	○		
556	α-Methyl styrene	98-83-9	◎	○	○		
557	Mevinphos (Phosdrin®)	7786-34-7	◎	○	○		
558	Mineral wool fiber	—					○
559	Molybdenum and compounds, as Mo	7439-98-7					○
560	Monochloroacetic acid	79-11-8					○
561	Morpholine	110-91-8	◎	○	○		
562	Motor oils, used	—	◎	○	○		
563	Mustard gas (2,2'-Dichlorodiethyl sulfide)	505-60-2		○	○		
N							
564	Naled (Dibrom)	300-76-5	◎	○	○		
565	Naphtha, Benzin	8030-30-6	◎	○	○		
566	Naphtha (petroleum), Hydrotreated heavy	64742-48-9	◎	○	○		
567	Naphthalene	91-20-3	◎	○	○		
568	1,5-Naphthalene diisocyanate (NDI)	3173-72-6	○				○
569	α-Naphthylamine (1-Naphthylamine)	134-32-7	○				○
570	β-Naphthylamine (2-Naphthylamine)	91-59-8	○				○
571	Neon	7440-01-9					○
572	Nickel	7440-02-0					○
573	Nickel carbonate	3333-67-3					○
574	Nickel chloride	7718-54-9					○
575	Nickel oxide	1313-99-1					○
576	Nickel sulfide	16812-54-7					○
577	Nicotine	54-11-5	◎	○	○		
578	Nitrapyrin (2-Chloro-6-(trichloromethyl)pyridine)	1929-82-4					○
579	Nitric acid	7697-37-2		○	○		
580	5-Nitroacenaphthene	602-87-9					○
581	2-Nitro-4-aminophenol	119-34-6					○
582	4-Nitroaniline	100-01-6					○
583	Nitrobenzene	98-95-3	◎	○	○		
584	4-Nitrobiphenyl	92-93-3					○

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Substance	CAS No.	Recommended Filter				Airline or SCBA
		Gas Filter			Particle	
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
585 Nitroethane	79-24-3	◎	○	○		
586 Nitrogen dioxide	10102-44-0		○	○		
587 Nitrogen monoxide	10102-43-9		○	○		
588 Nitrogen trifluoride	7783-54-2					○
589 Nitroglycerin (Glyceryl trinitrate)	55-63-0	◎	○	○		
590 Nitromethane	75-52-5	◎	○	○		
591 1-Nitronaphthalene	86-57-7				○	
592 2-Nitronaphthalene	581-89-5				○	
593 5-Nitro-o-toluidine	99-55-8				○	
594 2-Nitro-1,4-phenylenediamine	5307-14-2				○	
595 1-Nitropropane	108-03-2	◎	○	○		
596 2-Nitropropane	79-46-9	◎	○	○		
597 1-Nitropyrene	5522-43-0				○	
598 2-Nitropyrene	789-07-1				○	
599 4-Nitropyrene	57835-92-4				○	
600 N-Nitrosodiethanolamine (NDELA)	1116-54-7	◎	○	○		
601 N-Nitrosodiethylamine (NDEA)	55-18-5	◎	○	○		
602 N-Nitrosodiisopropylamine	601-77-4				○	
603 N-Nitrosodimethylamine	62-75-9	◎	○	○		
604 N-Nitrosodi-n-butylamine (DBN)	924-16-3	◎	○	○		
605 N-Nitrosodi-n-propylamine (NDPA)	621-64-7	◎	○	○		
606 N-Nitrosoethylphenylamine	612-64-6	◎	○	○		
607 N-Nitrosomethylethylamine	10595-95-6	◎	○	○		
608 N-Nitrosomethylphenylamine	614-00-6	◎	○	○		
609 N-Nitrosomorpholine (NMOR)	59-89-2	◎	○	○	○	
610 N-Nitrosopiperidine (NPIP)	100-75-4	◎	○	○		
611 N-Nitrosopyrrolidine (NPYR)	930-55-2	◎	○	○		
612 2-Nitrotoluene	88-72-2	◎	○	○		
613 3-Nitrotoluene	99-08-1	◎	○	○		
614 4-Nitrotoluene	99-99-0				○	
615 Nonane	111-84-2	◎	○	○		
O						
616 Oakwood dust	—				○	
617 Octachloronaphthalene	2234-13-1				○	
618 n-Octane	111-65-9	◎	○	○		
619 1-Octanol	111-87-5	◎	○	○		
620 1-Octene	111-66-0	◎	○	○		
621 Oil mist, mineral	8012-95-1	◎	○	○		
622 Osmium tetroxide	20816-12-0		○	○		
623 Oxalic acid	144-62-7				○	
624 4,4'-Oxydianiline	101-80-4				○	
625 Oxygen difluoride	7783-41-7					○
626 Ozone	10028-15-6	◎	○	○		
P						



◎ : Highly Recommended ○ : Recommended

	Substance	CAS No.	Recommended Filter				Airline or SCBA
			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
627	Palmitic acid	57-10-3				○	
628	Paraffin wax fume	8002-74-2				○	
629	Paraldehyde	123-63-7	◎	○	○		
630	Paraquat dichloride	1910-42-5				○	
631	Parathion	56-38-2	◎	○	○		
632	Pentaborane	19624-22-7					○
633	Pentachloroethane	76-01-7	◎	○	○		
634	Pentachloronaphthalene	1321-64-8				○	
635	Pentachlorophenol	87-86-5				○	
636	Pentane	109-66-0	◎	○	○		
637	n-Pentanol	71-41-0	◎	○	○		
638	Peracetic acid	79-21-0	◎	○	○		
639	Perchloromethyl mercaptan	594-42-3	◎	○	○		
640	Perchloryl fluoride	7616-94-6		○	○		
641	Permethrin	52645-53-1	◎	○	○		
642	Phenol	108-95-2	◎	○	○		
643	Phenolphthalein dissolved in ethanol	77-09-8				○	
644	Phenyl acetate	122-79-2	◎	○	○		
645	p-Phenylenediamine	106-50-3				○	
646	Phenyl ether	101-84-8				○	
647	Phenyl ether/biphenyl mixture	8004-13-5	◎	○	○		
648	Phenyl glycidyl ether (PGE)	122-60-1	◎	○	○		
649	Phenylhydrazine	100-63-0	◎	○	○		
650	Phenyl isocyanate	103-71-9	◎	○	○		
651	Phenyl mercaptan	108-98-5	◎	○	○		
652	N-Phenyl-β-naphthylamine	135-88-6				○	
653	Phenylphosphine	638-21-1					○
654	Phorate	298-02-2	◎	○	○		
655	Phosgene (Carbonyl chloride)	75-44-5		○	○		
656	Phosphine	7803-51-2					○
657	Phosphoric acid	7664-38-2		○	○		
658	Phosphorous acid	13598-36-2				○	
659	Phosphorus, Yellow	12185-10-3		○	○		
660	Phosphorus oxychloride	10025-87-3		○	○		
661	Phosphorus pentachloride	10026-13-8		○	○		
662	Phosphorus pentasulfide	1314-80-3		○	○		
663	Phosphorus pentoxide	1314-56-3		○	○		
664	Phthalic anhydride	85-44-9	◎	○	○		
665	Picloram	1918-02-1				○	
666	Picric acid	88-89-1				○	
667	Platinum, soluble salts, as Pt	7440-06-4				○	
668	Polychlorinated biphenyls (PCBs)	1336-36-3	◎	○	○		
669	Polyvinyl chloride (PVC)	9002-86-2				○	
670	Portland cement	65997-15-1				○	
671	Potassium chloride	7447-40-7				○	
672	Potassium chromate	7789-00-6				○	
673	Potassium cyanide, as CN	151-50-8				○	
674	Potassium hydroxide	1310-58-3				○	

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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
675	Potassium sulfate	7778-80-5				○	
676	1,3-Propane sultone	1120-71-4				○	
677	2-Propanethiol	75-33-2	◎	○	○		
678	n-Propanol (n-Propyl alcohol)	71-23-8	◎	○	○		
679	2-Propanol (Isopropyl alcohol)	67-63-0	◎	○	○		
680	Propargyl alcohol	107-19-7	◎	○	○		
681	β-Propiolactone	57-57-8	◎	○	○		
682	Propionaldehyde (Propanal)	123-38-6					
683	Propionic acid	79-09-4	◎	○	○		
684	Propoxur	114-26-1				○	
685	n-Propyl acetate	109-60-4	◎	○	○		
686	Propylamine	107-10-8			○		
687	Propylene	115-07-1					○
688	Propylene glycol	57-55-6	◎	○	○		
689	Propylene glycol dinitrate (PGDN)	6423-43-4	◎	○	○		
690	Propylene oxide (1,2-Epoxypropane)	75-56-9	◎	○	○		
691	Propyleneimine	75-55-8	◎	○	○		
692	Propyl formate	110-74-7	◎	○	○		
693	n-Propyl mercaptan	107-03-9	◎	○	○		
694	Pyrethrum	8003-34-7	◎	○	○		
695	Pyridine	110-86-1	◎	○	○		
Q							
696	Quinone (p-Benzoquinone)	106-51-4	◎	○	○		
R							
697	Rodium, elemental	7440-16-6				○	
698	Rotenone, commercial	83-79-4				○	
S							
699	Salicylic acid	69-72-7				○	
700	Sarin (GB)	107-44-8	◎	○	○		
701	Selenium compounds, as Se	7782-49-2				○	
702	Silica, amorphous, fused	60676-86-0				○	
703	Silica, amorphous, silica fume	69012-64-2				○	
704	Silica, crystalline, cristobalite	14464-46-1				○	
705	Silica, crystalline, α-quartz	14808-60-7				○	
706	Silicon carbide, fibrous dust	409-21-2				○	
707	Silicon carbide, nonfibrous	409-21-2				○	
708	Silver, metal	7440-22-4				○	
709	Silver, soluble compounds, as Ag	7440-22-4				○	
710	Soap solution	—	◎	○	○		
711	Sodium azide	26628-22-8				○	
712	Sodium benzoate	532-32-1				○	
713	Sodium bisulfite	7631-90-5				○	
714	Sodium chlorate	7775-09-9				○	
715	Sodium chloride	7647-14-5				○	
716	Sodium chromate	7775-11-3				○	

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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
717	Sodium cyanide, as CN	143-33-9				○	
718	Sodium fluoroacetate	62-74-8				○	
719	Sodium hydrogen carbonate	144-55-8				○	
720	Sodium hydroxide	1310-73-2				○	
721	Sodium metabisulfite	7681-57-4				○	
722	Sodium silicate	6834-92-0				○	
723	Sodium sulfate	7757-82-6				○	
724	Sodium thiosulfate	7772-98-7				○	
725	Soman (GD)	96-64-0	◎	○	○		
726	Stearic acid	57-11-4				○	
727	Stibine	7803-52-3					○
728	Stoddard solvent	8052-41-3	◎	○	○		
729	Strontium chromate, as Cr	7789-06-2				○	
730	Strychnine	57-24-9				○	
731	Styrene, monomer	100-42-5	◎	○	○		
732	Subtilisin	1395-21-7				○	
733	Sulfotep (TEDP)	3689-24-5	◎	○	○		
734	Sulfur dichloride	10545-99-0		○	○		
735	Sulfur dioxide	7446-09-5		○	○		
736	Sulfuric acid	7664-93-9		○	○	○	
737	Sulfur pentafluoride	5714-22-7		○	○		
738	Sulfur tetrafluoride	7783-60-0					○
739	Sulfur trioxide	7446-11-9		○	○		
740	Sulfuryl chloride	7791-25-5		○	○		
741	Sulfuryl difluoride	2699-79-8					○
T							
742	2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)	93-76-5				○	
743	Tabun (GA)	77-81-6	◎	○	○		
744	Talc, containing no asbestos fibers	14807-96-6				○	
745	Tannic acid and tannins	1401-55-4				○	
746	Tantalum, metal	7440-25-7				○	
747	Tar fumes	—				○	
748	Tartaric acid	526-83-0				○	
749	Tellurium and compounds, as Te	13494-80-9				○	
750	Tellurium hexafluoride, as Te	7783-80-4					○
751	Terpentine oil	—	◎	○	○		
752	Terphenyls	26140-60-3				○	
753	1,1,2,2-Tetrabromoethane	79-27-6	◎	○	○		
754	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6				○	
755	1,1,1,2-Tetrachloro-2,2-difluoroethane (FC-112a)	76-11-9				○	
756	1,1,2,2-Tetrachloro-1,2-difluoroethane (FC-112)	76-12-0	◎	○	○		
757	1,1,2,2-Tetrachloroethane	79-34-5	◎	○	○		
758	Tetrachloroethylene (Perchloroethylene)	127-18-4	◎	○	○		

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	Substance	CAS No.	Recommended Filter				Airline or SCBA
			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
759	Tetrachloronaphthalene	1335-88-2				○	
760	Tetraethyl lead	78-00-2	◎	○	○		
761	Tetraethyl pyrophosphate (TEPP)	107-49-3	◎	○	○		
762	Tetraethyl silicate	78-10-4	◎	○	○		
763	Tetrahydrofuran	109-99-9	◎	○	○		
764	Tetrahydrothiophene (THT)	110-01-0	◎	○	○		
765	1,2,4,5-Tetramethylbenzene	95-93-2				○	
766	Tetramethyl lead	75-74-1	◎	○	○		
767	Tetramethyl succinonitrile	3333-52-6	◎	○	○		
768	Tetranitromethane	509-14-8		○	○		
769	1,3,6,8-Tetranitropyrene	28767-61-5				○	
770	Tetrasodium pyrophosphate	7722-88-5				○	
771	Tetryl (N-Methyl-N,2,4,6-tetranitroaniline)	479-45-8				○	
772	Thallium and soluble compounds, as Tl	7440-28-0				○	
773	4,4'-Thiobis(6-tert-butyl-m-cresol)	96-69-5				○	
774	4,4'-Thiodianiline	139-65-1				○	
775	Thioglycolic acid	68-11-1	◎	○	○		
776	Thionyl chloride	7719-09-7		○	○		
777	Thiourea	62-56-6				○	
778	Thiram	137-26-8				○	
779	Tin(IV) chloride	7646-78-8		○	○		
780	Titanium dioxide	13463-67-7				○	
781	Toluene (Toluol)	108-88-3	◎	○	○		
782	Toluene-2,4-diisocyanate	584-84-9	◎	○	○		
783	Toluene-2,6-diisocyanate	91-08-7	◎	○	○		
784	p-Toluidine	106-49-0	◎	○	○		
785	Tributyl phosphate	126-73-8	◎	○	○		
786	Tri-n-butyltin benzoate	4342-36-3	◎	○	○		
787	Tri-n-butyltin chloride	1461-22-9	◎	○	○		
788	Tri-n-butyltin fluoride	1983-10-4				○	
789	Tri-n-butyltin linoleate	24124-25-2	◎	○	○		
790	Tri-n-butyltin methacrylate	2155-70-6	◎	○	○		
791	Tri-n-butyltin naphthenate	85409-17-2	◎	○	○		
792	Trichloroacetic acid	76-03-9				○	
793	1,2,4-Trichlorobenzene	120-82-1	◎	○	○		
794	2,3,4-Trichloro-1-butene	2431-50-7	◎	○	○		
795	1,1,2-Trichloroethane	79-00-5	◎	○	○		
796	Trichloroethylene	79-01-6	◎	○	○		
797	Trichloronaphthalene	1321-65-9				○	
798	1,2,3-Trichloropropane	96-18-4	◎	○	○		
799	Tricyclohexyltin hydroxide	13121-70-5				○	
800	Tridymite	15468-32-3				○	
801	Triethanolamine	102-71-6	◎	○	○		
802	Triethylamine	121-44-8	◎	○	○		
803	Triethylene tetramine	112-24-3	◎	○	○		
804	Trimanganese tetraoxide	1317-35-7				○	
805	Trimellitic anhydride	552-30-7				○	

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	Substance	CAS No.	Recommended Filter				Airline or SCBA
			Gas Filter			Particle	
			VA1P3	VABE1P3	VA1B2E2K1P3	VP3	
806	Trimethylamine	75-50-3	◎	○	○		
807	2,4,5-Trimethylaniline	137-17-7				○	
808	1,2,3-Trimethyl benzene	526-73-8	◎	○	○		
809	1,2,4-Trimethyl benzene	95-63-6	◎	○	○		
810	1,3,5-Trimethyl benzene (Mesitylene)	108-67-8	◎	○	○		
811	2,4,4-Trimethyl-1-pentene	107-39-1	◎	○	○		
812	Trimethyl phosphate	512-56-1	◎	○	○		
813	Trimethyl phosphite	121-45-9	◎	○	○		
814	2,4,7-Trinitrofluorenone	129-79-3	◎	○	○		○
815	2,4,6-Trinitrotoluene (TNT)	118-96-7				○	
816	1,3,6-Trinitropyrene	75321-19-6				○	
817	Tri-o-tolyl phosphate	78-30-8	◎	○	○		
818	Tri-p-tolyl phosphate	78-32-0				○	
819	Triphenyl amine	603-34-9				○	
820	Triphenyl phosphate	115-86-6	◎	○	○		
821	Tungsten and insoluble compounds, as W	7440-33-7				○	
822	Turpentine	8006-64-2	◎	○	○		
U							
823	n-Undecane	1120-21-4	◎	○	○		
824	Uranium, natural, soluble and insoluble compounds, as U	7440-61-1				○	
V							
825	Vanadium pentoxide, as V	1314-62-1				○	
826	Vinyl acetate	108-05-4	◎	○	○		
827	Vinyl chloride (Chloroethylene)	75-01-4					○
828	Vinyl toluene	25013-15-4	◎	○	○		
829	VM & P naphtha	8032-32-4	◎	○	○		
830	VX (nerve agent)	50782-69-9	◎	○	○		
W							
831	Warfarin	81-81-2	◎	○	○		
832	Welding fumes	—				○	
833	White spirit	—	◎	○	○		
834	Wood oil	—	◎	○	○		
X							
835	o-Xylene	95-47-6	◎	○	○		
836	m-Xylene	108-38-3	◎	○	○		
837	p-Xylene	106-42-3	◎	○	○		
838	2,6-Xylenol (2,6-Dimethyl phenol)	576-26-1				○	
839	2,5-Xylenol (2,5-Dimethyl phenol)	95-87-4	◎	○	○		
840	2,4-Xylenol (2,4-Dimethyl phenol)	105-67-9				○	
841	2,3-Xylenol (2,3-Dimethyl phenol)	526-75-0				○	



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Substance	CAS No.	Recommended Filter				Airline or SCBA	
		Gas Filter			Particle		
		VA1P3	VABE1P3	VA1B2E2K1P3	VP3		
842	3,4-Xylenol (3,4-Dimethyl phenol)	95-65-8				○	
843	3,5-Xylenol (3,5-Dimethyl phenol)	108-68-9				○	
844	2,3-Xylidine	87-59-2	◎	○	○		
845	2,4-Xylidine	95-68-1	◎	○	○		
846	2,5-Xylidine	95-78-3	◎	○	○		
847	2,6-Xylidine	87-62-7	◎	○	○		
848	3,4-Xylidine	95-64-7				○	
849	3,5-Xylidine	108-69-0	◎	○	○		
Y							
850	Yttrium and compounds, as Y	7440-65-5				○	
Z							
851	Zinc chloride, fume	7646-85-7				○	
852	Zinc chromates, as Cr	13530-65-9				○	
853	Zinc oxide, fume	1314-13-2				○	
854	Zinc sulfate	7733-02-0				○	
855	Zirconium compounds, as Zr	7440-67-7				○	

For further details regarding selection criteria of this Guide, please refer to the appendix on the back of this page.

All information in this Guide was prepared in January 2013, and is subject to change without prior notice.

All information contained in the table and these notes has been compiled using reusable skill and diligence and is offered in good faith, but STS can accept no responsibility for errors or omissions in this guide.

Types of filter used was decided by the working environment and characteristics of substance, as shown in table 1

Table 1.

Characteristics of Substance	Type of Filter
Substances with melting point over 50°C	Particle Filter
Substances with melting point between 0°C to 50°C, or Substances which may sublime	Particle and Gas Filter
Substances with melting point below 0°C	Gas Filter
Substances which has no recommended filter or Substance without test data	Airline or SCBA

Classes of filter used was decided by the hazardous substance, as shown in table 2

Table 2.

Hazardous Substance	Filter(s) Classifications
Carcinogenic substances ⁽¹⁾	TM3
Substances which are listed in Poisonous and Deleterious Substances Control Law of Japan	TM3
Substances of which TLV-TWA(Threshold Limit Values- Time-weighted average) is equal to or below 0.1 mg / m ³	TM3
Substances other than the above	TM2

⁽¹⁾ Guide to Occupational Exposure Value classified Carcinogenic substances into A1~A3 (ACGIH Guide to Occupational Exposure Values 2012) and/or 1~2B (IARC Monographs 2011)